

# The Drug-Tech Interface, Part 2: Digital Technology and Psychopharmacology in Late Capitalist Culture

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Whereas the version of the drug-tech interface at work in 90s rave operated fleetingly at the margins of popular culture, its neoliberal counterpart is a culturally ubiquitous phenomenon that has imposed long-term and large-scale structural changes on popular culture, human cognition and everyday life. In that regard, it has far surpassed the cultural and cognitive impact of its 90s anti-capitalist predecessor. Hence, even though the actual cultural and cognitive modifications effectuated by the neoliberal version of the drug-tech interface are far from exciting, even its critics should be attentive to the scale on and the speed with which these changes have been implemented. This means that rather than simply being rejected because of its current tendency towards psychosocial alienation, the neoliberal version of the drug-tech interface needs to be understood as a springboard for novel forms of cultural and cognitive experiments along equally large-scale and long-term, post-capitalist trajectories.

One of the key theorists of the cultural and cognitive impact of the neoliberal version of the drug-tech interface is the cultural and political theorist Franco Berardi. Most notably in his book *Precarious Rhapsody: Semiocapitalism and the Pathologies of the Post-Alpha Generation* (2009), which traces the neurochemical and psychosocial pathologies that have emerged along with the digital technologies of late capitalism. What is central with digital technology for Berardi is the way it has been integrated into the biology of the human organism in the form of what he refers to as ‘a post-human vision of digital production’, where flesh and circuitry fuse into a global ‘digital nervous system’ thanks to the massive proliferation of screens and interfaces in all parts of life under late capitalism. As he puts it himself: ‘the hidden finality of software production is the wiring of the human mind in a network continuum of the cybernetic type destined to structure the fluxes of digital information by means of the nervous system of all the key institutions of contemporary life’.<sup>1</sup> In other words, for Berardi, cyberspace under late capitalism is a ‘neurostimulant flux’ – or a ‘neuro-telematic rhizome’ – which takes the form of the internalisation of the machine following the passage from Fordist to precarious labour. For whereas Fordist machines operate as external enhancements of the human body, the post-Fordist ‘bio-info machine’ is an internal modifier of human cognition itself. And

whereas the Fordist machines are situated within the physical borders of the factory, the bio-info machine (i.e. cyberspace) exists everywhere in all parts of life. Hence, for Berardi, the smart phone and other electronic devices constitute the link between the demands of what he calls 'semio-capitalism' and the living labour of its fragmented cells. It is the late capitalist version of the conveyor belt proper to precarious labour and the integration of cognition itself into the heart of capitalist production.

The major consequence of this late capitalist fusion of flesh and circuitry is a massive intensification of informational stimuli, wherein the organism is subjected to such an intense cognitive overload that it runs the risk of undergoing psychic meltdown; for just as the external machines of Fordism have depleted our planetary resources, the internal machines of post-Fordism are now doing the same to our psychochemical resources. Hence the widespread proliferation of panic-depressive syndromes and attention disorders, as well as the emergence of phenomena such as multitasking and what Berardi refers to as a 'Prozac culture' that both work as feeble attempts to counteract the psychochemical and neuro-stimulant intensification caused by the entwinement of biological and technological nervous systems.

According to Berardi, the threat of psychic meltdown first and foremost stems from the growing disjunction between transmitter and receiver – or the widening gap between a continuously upgraded, digital media-sphere and the much slower transformation of the human cognitive system, which lags further and further behind the increasingly fast-paced mutations of digital culture. We are simply no longer able to process the vast amounts of data that constantly is being fed to us because of our cognitive and biological constraints, and therefore turn to multitasking and similar methods for fast cognitive interfacing at the cost of concentrated attention and deep focus. For Berardi, this asymmetry is best characterised in terms of the difference between 'cyberspace' and 'cybertime'. Cyberspace, as is well known, is the techno-cultural sphere where mind and machine are linked together into an infinitely expanding network of information and transmission. Cybertime, on the other hand, is the organic register of human cognition, attention and experience, which – unlike that of cyberspace – expands at a much slower rate because of the biological constraints of the organism. As Berardi puts it: 'The mutation of the technological environment is much more rapid than the changes in cultural habits and cognitive models',<sup>2</sup> which produces a basic asymmetry between the objectivity of cyberspace and the subjectivity of cybertime (or between structure and experience, to use Fredric Jameson's formulation) in the form of a late capitalist acceleration of experience

wherein the increasing lack of time for attention and elaboration results in an epidemic of various psychosocial pathologies that by now are as common as digital technology as such.

The key question then obviously becomes: How do we overcome this? Should we withdraw from the 'info-sphere' of digital media and aim to decelerate our fast-paced lives through the restoration of a more authentic human 'psycho-sphere'? For Berardi, this will not be sufficient. Given the degree to which digital technology has become integrated into our everyday lives today, it is no longer desirable or even possible to simply opt out of the digital network-continuum. For while cognitive deceleration certainly works as a useful short-term solution from time to time, it is clear that it will not offer more than temporary autonomy from the demands of the late capitalist cyberspace-matrix. And, of course, withdrawing from the digital technologies of late capitalism also means withdrawing from the wider emancipatory potencies implicit in these technologies. Instead, another more productive path hinted at by Berardi is the construction of novel methods for our cognitive interfacing with digital media. Crucial here is his suggestion that our cognitive infrastructure also needs to be reformatted in a way similar to the digital reformatting of the present media-sphere – and that it is here that the work of artists will become key for constructing speculative models of such cognitive reformatting: 'Aesthetic perception [...] is directly involved in this transformation: in its attempt to efficiently interface with the connective environment'.<sup>3</sup> This is after all what the most exciting visions of the post-human aim to address, as Berardi points out: the cognitive and corporeal *upgrading* of the human organism by an aesthetics and techno-science uninhibited by the demands of the late capitalist profit-economy.<sup>4</sup> For the emergence of the present, digital technosphere is really a consequence of how – following the decades of Reagan and Thatcher – scientific knowledge has been subordinated to the narrow functional operations of technological automation under late capitalism, and for Berardi it is therefore the central objective of what he refers to as the 'cognitariat' (i.e. the proletariat under cognitive capitalism) to reclaim the autonomy of cognition, science and technology from the profit-economy of semio-capitalism. He thus speculates about the formation of a 'high tech labour movement' of autonomous researchers invested in scientific research divorced from the cognitive framework imposed by semio-capitalism, and whose main task would be 'the social, epistemic, and technological re-composition of cognitive labour'.<sup>5</sup>

But even though I agree with Berardi's commitment to cognitive reformatting in critical response to the emergence of semio-capitalism, I am unconvinced by his insistence on preserving a somewhat conservative distinction between human and machine cognition – which takes

the form of a basic contrast between the ‘conjunctive’ parameters of the human organism and the ‘connective’ registers of semio-capital:

Conjunction is the meeting and fusion of round and irregular shapes that are continuously weaselling their way about with no precision, repetition or perfection. Connection is the punctual and repeatable interaction of algorithmic functions, straight lines and points that overlap perfectly, and plug in or out according to discrete modes of interaction that render the different parts compatible to a pre-established standard. The shift from conjunction to connection as the predominant mode of interaction of conscious organisms is a consequence of the gradual digitalization of signs and the increasing mediatization of relations.<sup>6</sup>

Yet the obvious question is whether this sharp distinction between human bodies and algorithmic functions risks obviating the wider speculative implications of the call for cognitive reformatting – particularly given Berardi’s tendency to always pit the ‘good’ conjunctive against the ‘bad’ connective (which echoes Simon Reynolds’ contrast between collective freak-out and quasi-collective connectivity, as discussed in the first part of this series).<sup>7</sup> For instance, when assessing what he considers to be the ultimate ‘philosophical flaw’ of the transhumanist project – understood as a ‘project and a strategy for the reprogramming of the human brain’ according to the objectification (or automation) of cognitive activity – Berardi thus argues that this project is based on what he refers to as ‘a flawed idea of the human experience’. Thus, while he acknowledges that cognition may be reduced to an objective set of formal procedures – that in principle could be instantiated in an artificial agent or android – the latter will be no more than a mere simulation of the human organism, since human experience cannot be reduced to discrete sets of informational procedures. For Berardi, experience is equivalent to ‘the self-reflective deployment of consciousness in the temporal dimension’ – which ultimately comes down to the awareness of death as the temporal limit of the organism – and it is this experience of time that is unique to *Homo sapiens* and consequently marks the human nexus that transhumanist objectification is unable to annex.<sup>8</sup> Here, Berardi thus aligns himself with the plethora of philosophers and critical theorists committed to the unobjectifiable transcendence of human experience – that stands in sharp contrast with those defending its immanent objectivity<sup>9</sup> – which indeed scales down the transformative magnitude of critique by putting an uncomfortable restriction on the untapped potentials of cognitive reformatting.

I thus remain wary of Berardi's critique of connection in terms of what he refers to as 'a simple effect of machine functionality', as well as his worries about the gradual deterioration of conjunctive organic registers such as sensibility and affectivity following the fusion of digital and cybernetic devices with the human body in the wake of the sociocultural shift from conjunctive to increasingly connective modes of interaction. For another crucial point here is of course that just because connection has had this kind of impact in its current form, this does not mean that it cannot be remobilised for entirely different, post-capitalist purposes. Hence, I think that the ambition to integrate the connective with the conjunctive – as opposed to maintaining a basic dichotomy between the two – provides a more robust ground for the cognitive reformatting hinted at by Berardi.

But nevertheless, Berardi's account still provides us with several crucial resources for the sake of the current argument. In the same essay where he rejects transhumanism, he also argues that the plasticity of our neurobiological substratum will play a key role both for a better understanding of the digital pathologies endemic to late capitalist culture, and for the construction of cognitive models that will help us realising 'a project of neuroemancipation from our surrounding reality'.<sup>10</sup> This may be contrasted with the ways that plasticity has been utilised by capitalism – in order to maintain the agendas of precarity and cognitive labour – and the key task of neuroemancipation *qua* cognitive reformatting would consequently be to reorient technology, neurobiology and cognitive science away from these narrow domains by tapping into their truly transformative registers. Indeed, the massive increase in consumption of various antidepressants under late capitalism may be understood as feeble attempts at such cognitive reformattings. As Berardi points out, just as the abuse of illegal substances such as heroin and cocaine skyrocketed following the acceleration of production and the precarisation of labour in the 80s and 90s,<sup>11</sup> the 90s and current flourishing in the sales of antidepressants (such as Zoloft, Prozac and Ritalin) may be understood as flawed attempts at augmenting the human brain's capacities in response to the cognitive and chemical imbalances brought about by the techno-social landscape of semio-capitalism. Indeed, since the proliferation of these substances is orchestrated by capitalism itself and only works towards functionally reintegrating cognitive systems into the agenda of semio-capital, they are ultimately insufficient for overcoming its cognitive framework and rather play a key part in it.

Here I would like to take a closer look at one such substance – Prozac (Fluoxetine) – in order to better understand the drug-component of the neoliberal version of the drug-tech interface, its wider transformative implications, and its contrasts and overlaps with its Ecstasy

cousin. Indeed, at the same time as Ecstasy rapidly spread across the sonic underground during the 90s, Prozac began to enter the therapeutic scene prior to playing an important part in the shaping of late capitalist precarity. Prozac was first discovered by scientists working at the American global pharmaceutical company Eli Lilly and Company, and was approved by the Food and Drug Administration for treatment of severe depression in 1987. There are several interesting sociocultural and neurochemical parallels between Ecstasy and Prozac insofar as both act as mood-altering serotonin reuptake-inhibitors that tend to stimulate increasingly outgoing social behaviour – yet the sociocultural landscapes that these substances have helped shaping are in many ways strictly opposed. And like Ecstasy, Prozac has had significant impact on popular culture: it was on the cover of magazines such as *Newsweek* and *New York Magazine*, it has been widely discussed on talk shows such as *Oprah Winfrey* and *The Today Show*, it has spawned significant pro- and con-movements arguing for its many virtues and side-effects, and it played a central role in Elizabeth Wurtzel's autobiographical novel *Prozac Nation* (1994). Yet the drug also has wider speculative and sociocultural implications insofar as its neurochemical effects have been shown to sometimes stretch beyond mere treatment of psychiatric disorders and also encompass cognitive and emotional makeovers that may take the form of a full-blown psychopharmacological self-transformation.

It is this latter perspective that interests the psychologically trained psychopharmacologist Peter D. Kramer in his book *Listening to Prozac* (2006). This is the book that first introduced the by now famous concept 'cosmetic psychopharmacology' – and it did so on the basis of Kramer's own experiences with a number of his patients' reactions to Prozac, which seemed to go beyond the mere regaining of psychological health. After taking Prozac, timid people became socially confident, sufferers of abuse suddenly stood up for themselves, people with low self-esteem started to exhibit remarkable self-confidence, and so on. This led Kramer into speculations on the impact of biology on personality, the sociocultural implications of a drug that can alter or even transform personality, and the neurobiological underpinnings of various kinds of mental disorders. *Listening to Prozac* thus combines theoretical reflections with empirical data drawn from Kramer's experience as a practicing psychopharmacologist. More specifically, the book contains a number of recapitulations of professional encounters with patients whose responses to Prozac stood out for a number of reasons. For instance, the opening chapter of the book (entitled 'Makeover') tells the story of a highly accomplished businesswoman in her thirties who nevertheless suffered from clinical depression. She had endured a difficult childhood with various forms of physical abuse, an alcoholic father who died when she

was twelve, and a clinically depressed mother. After the death of her father, she had no choice but to take care of her family – which consisted of nothing less than nine younger siblings and later on a significantly older alcoholic husband whom she married at age seventeen – by herself. Following the collapse of her marriage, she had been engaging in a series of affairs with abusive men since she saw herself as unattractive and felt that no one else was interested in her. After modest responses to other antidepressants, Kramer prescribed Prozac to the woman and was astonished by its effects (this was shortly after the drug first was approved by the Food and Drug Administration). Just two weeks after she first went on medication, the woman stopped feeling depressed and announced with astonishment how remarkable it felt to no longer feel depleted of energy. Her social aura changed, and she suddenly exhibited a more energetic and outgoing persona that also affected her social life dramatically in that she emancipated herself from her previous relations with abusive men and instead came to enjoy the sociality of dating. She also started showing more confidence at work, expanded her circle of friends, and no longer struggled with her many previous inner conflicts about herself and how she related to others. Yet when she was taken off medication, she slowly started to regress into her previous psychological self and sadly declared that ‘I am not myself’. And once back on medication, her socially confident and outgoing self returned once again.

There are two aspects in particular that interests Kramer about this and all the other stories about certain patients’ responses to Prozac that are recapitulated in the book. The first one has to do with the extent of the *transformative effects* of medication on entire personalities, which went far beyond the very specific *restorative functions* that commonly are associated with antidepressants. As he puts it:

It is all very well for drugs to do small things: to induce sleep, to allay anxiety, to ameliorate a well-recognized syndrome. But for a drug’s effect to be so global – to extend to social popularity, business acumen, self-image, energy, flexibility, sexual appeal – touches too closely on fantasies about medication for the mind.<sup>12</sup>

This radical makeover indeed converges with a common fear among patients that antidepressants will significantly alter their selves, rather than just counteract particular forms of mental disorders. And indeed, this is exactly what Prozac at least in some cases seems to be capable of according to Kramer: transformation as opposed to mere restoration. The second aspect has to do with the sheer rapidity of the transformations. Whereas overcoming the symptoms exhibit-

ed by the woman in the above story is a gradual affair in traditional therapy, medication effectuated a radical, global transformation within a very brief time. Kramer points out that it was almost as if a biological switch had been turned on, which suddenly reconfigured her public and private selves in profound ways. It is patients like this that have been central to Kramer's writings and that led him into speculations about psychopharmacological compounds that not merely heal, but effectuate radical transformations of selves by altering their neurobiological underpinnings. Indeed, for Kramer, these transformations open up an entire field of speculative psychopharmacology that encompasses both biologically informed models of mental disorders, as well as potential future scenarios where drugs such as Prozac may be used also for cosmetic rather than medical purposes (much like surgery already is, for instance) in culture at large.

In that regard, the concept of cosmetic psychopharmacology raises a number of concerns about the authenticity of our own humanity. This issue has been addressed in the work of authors such as Walker Percy (also discussed by Kramer), whose novel *The Thanatos Syndrome* (1987) tells the story of a former psychiatrist who faces a dangerous plot upon returning to his home town. This involves the spreading of a rogue chemical called Heavy Sodium through the town's water supply. Once affected by the chemical, people lose their past inhibitions and become outgoing, competitive and sexually promiscuous. Yet they also end up losing their distinct sense of humanity. Percy, a man of Catholic faith, wrote the novel in order to dramatise how the artificiality of techno-science threatens to annihilate the human life-world by severing the link between man and God. For Percy, what constitutes this link is man's ability to suffer. Symptoms such as pain, anxiety and guilt are central to what is distinctly human in Percy's view – and the only way to overcome them is through inner journeys of self-discovery, as opposed to through artificial numbness and tranquilisation. According to Percy, the latter constitutes a dangerous pathology of contemporary society – that is, a lack of understanding of symptoms central to the authentic human condition – that manifests itself in the form of an aesthetic and existential deterioration brought about by a scientific perspective incapable of properly diagnosing the humanity whose interests it supposedly operates according to.

Percy's Catholic perspective is just one example of one of the major forms of criticisms that have been directed at cosmetic psychopharmacology and human enhancement in general: the idea that suffering constitutes a pre-determined limit of human existence and that the pursuit of its reduction or elimination via artificial means is itself a dangerous pathology. The roots to this form of criticism are obviously theological – suffering as an inherently meaningful con-

dition of human existence – but have also been extended to non-theological realms in the form of similar commitments to that which makes us authentically human. But, as the philosopher Ray Brassier points out, we should be very suspicious of any claim that suffering is inherently meaningful and central to the human, since ‘the fact that we have learnt to extract meaning from our susceptibility to suffering, illness, and death, does not license the claim that suffering, illness, and death are prerequisites for a meaningful existence’.<sup>13</sup> Indeed, our understanding of ourselves through our ability to reduce and even eliminate aspects of our suffering has already been greatly improved by advancements in medicine and biology – which makes the claim that suffering is a necessarily meaningful condition of human existence highly dubious.

The psychopharmacological modification of the plethora of human biological features should consequently not be viewed as a sin that turns our collective attention away from the original sin as constitutive of human existence, but as part of a program of cognitive mapping and transformation aimed at redrawing seemingly given limits of humanity. In that regard, it may be understood as part of the latest instantiation of the great scientific dethronings of man: the techno-scientific explication of the artificiality of the brain, which presents us with a distinct set of fears to overcome and opportunities to explore through the transition from what we may think of as a pre-modern to a modern understanding of the self. As Kramer puts it:

Copernicus wrenched the earth from the centre of the universe. Darwin undercut the human race’s uniqueness among God’s creations. Freud made the conscious mind less special. Modern biology attacks the centrality of mind altogether, highlighting the roles of brain and body. [...] As modern men and women, we may already be uncomfortable with the extent to which our surroundings, in the form of complex equipment, are beyond our ken. Now we are faced with the likelihood that introspection alone will not explain us to ourselves. [...] Like so many of the “good responders” to Prozac, we are two persons, with two senses of self. What is threatening to the old self is already comfortable, perhaps eagerly sought after, by the new. Here, I think, is Prozac’s most profound moral consequence, in changing the sort of evidence we attend to, in changing our sense of constraints on human behaviour, in changing the observing self.<sup>14</sup>

Yet despite the compelling speculative implications of a substance such as Prozac, it was within the context of capitalism’s orchestration under the aegis of connective precarity that it eventu-

ally came to have its primary cognitive and cultural impact. Kramer is not unaware of this, such as when he asks what kind of role Prozac may play within the contemporary world of business. Could it for instance be the case that the transformative potential of the drug merely fosters a particular kind of conformity to capitalist norms? Indeed, since the effects often induced by the substance – flexibility, energy, alertness – also are central to the capitalist world of precarity, is Prozac then merely an instrument for the socio-political logic of late capitalism? As he puts it himself: ‘The success of Prozac says that today’s high-tech capitalism values a very [particular kind of] temperament. Confidence, flexibility, quickness, and energy [...] are at a premium’.<sup>15</sup> Or, as the philosopher Catherine Malabou argues in her discussion of neuropsychiatry, depression and the logic of precarity in late capitalism: what the depressed person first and foremost represents is a broken link in the capitalist network of flexibility, and the function of antidepressant drugs such as Prozac is consequently to reintegrate the depressed person into the logic of precarity by stimulating the appropriate neurochemical transmissions. ‘Hence to heal means to reintegrate, to restore flexibility. [...] Medications should give back the appetite for mobility, the capacity to rid oneself of rigidity and of fixity in one’s identity’.<sup>16</sup> Thus, we may live in a permanent state of stress, depression and anxiety thanks to reduced job-security, minimal income, and the requirement to always be online and available – yet the real issue according to the logic of precarity is when a person is being cut off from this state of flexibility, and at which point neurochemical intervention becomes an appropriate means for ensuring quick reintegration.

But these analyses are contextual rather than abstract – which means that although the way Prozac operates in late capitalist culture is far from exciting, this does not entail that other more productive utilisations of cosmetic psychopharmacology cannot be implemented at a similar sociocultural scale. Thus, what is necessary here, as Berardi argues, is the construction of sociocultural platforms for collective neuro-engineering through the combined resources of cognitive science, socially oriented epistemology and aesthetic perception. The main task of these platforms will be to rehabilitate the link between social and aesthetic creativity, technoscientific research and progressive models of thought that were central to the modern era. The exact outcomes of such engineering we can only speculate on at the present – but regardless, this is an aesthetic and sociocultural project worth insisting on. For in a culture that has been so thoroughly transformed by technology and psychopharmacology in the wake of the emergence of cognitive capitalism and the precarisation of labour, it is becoming increasingly clear that attempting to ignore these transformations is not only conservative but simply impossible.

What rather is necessary is a deepened engagement with them in the same way as Marx attempted to with the techno-social infrastructure brought about by industrial capitalism. For the program of cognitive and sociocultural transformation advocated in these articles has already been initiated by capitalism on a widespread sociocultural scale, and is fuelled by the neo-Taylorist/Promethean ambition to radically reshape not only work but society as such. It is therefore a key task of the left at the present, I believe, to claim these resources for itself and significantly widen their cognitive and aesthetic scope beyond the paltry confines of their late capitalist, sociocultural deployment.

### Notes

1. Berardi, F. (2009) *Precarious Rhapsody: Semiocapitalism and the Pathologies of the Post-Alpha Generation* (London: Minor Compositions), p. 35.
2. Ibid. p. 70.
3. Ibid. p. 131.
4. Ibid. p. 43.
5. Ibid. p. 59.
6. Ibid. p. 99.
7. For a more comprehensive discussion of the distinction between conjunction and connection, see Berardi, F. (2015) *And: Phenomenology of the End* (Los Angeles: Semiotext(e)).
8. Berardi, F. (2014) 'The Neuroplastic Dilemma: Consciousness and Evolution', in e-flux #60. <http://www.e-flux.com/journal/the-neuroplastic-dilemma-consciousness-and-evolution/>
9. For an example of a conceptual outline of the phenomenological experience of time from the perspective of immanent objectivity, see Metzinger, T. (2010) *The Ego Tunnel: The Science of the Mind and the Myth of the Self* (New York: Basic Books), p. 34-40, and Metzinger, T. (2004) *Being No One: The Self-Model Theory of Subjectivity* (Cambridge: MIT Press), p. 126-131 and 310-313.
10. Berardi, 'The Neuroplastic Dilemma'.
11. Berardi, *Precarious Rhapsody*, p. 41-42 and 91-92.
12. Kramer, Peter D. (2006) *Listening to Prozac: The Landmark Book About Antidepressants and the Remaking of the Self* (London: Penguin Books), p. 13.
13. Brassier, R. (2014) 'Prometheanism and Its Critics', in A. Avanesian and R. Mackay, eds. (2014) *#Accelerate: The Accelerationist Reader* (Falmouth: Urbanomic), p. 481.
14. Kramer, *Listening to Prozac*, p. 297-300.
15. Ibid. p. 297.
16. Malabou, C. (2008) *What Should We Do with Our Brain?* (New York: Fordham University Press), p. 51-52.